

DIGITAL MAPPING TECHNIQUES 2019

The following was presented at DMT'19
(May 19 – 22, 2019 - Montana Technological
University)

The contents of this document are provisional

See Presentations and Proceedings
from the DMT Meetings (1997-2019)

<http://ngmdb.usgs.gov/info/dmt/>

Maintenance of Alaska databases Project

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The databases:

Alaska geologic map database published in 2015 as USGS Scientific Investigations Map SIM-3340 (<https://pubs.er.usgs.gov/publication/sim3340>); we intend to release a version 2.0 in calendar year 2019. The update will include more detailed mapping in some areas and will reflect additions or revisions to approximately 60 of the 153 1:250,000 scale quadrangles in Alaska.

The map database was released in a structure designed for use of the geology as an analytical tool for mineral resource assessments. Embedded in the spatial data are both bedrock and surficial geology in some parts of the State, which allows production of maps showing either characteristic geology.

Alaska Resource Data File (ARDF, ardf.wr.usgs.gov) is a database of mines, prospects, and mineral occurrences in Alaska. Updates to the website (<https://ardf.wr.usgs.gov/>) are provided episodically. Unlike many existing mineral occurrence databases, every record in ARDF is peer reviewed before inclusion in the database.

Overarching goal:

To provide the most current and accurate geologic map and ARDF databases as possible.

Process:

For the geologic map, we continually examine the literature for sources that can provide data on the geology of Alaska appropriate for inclusion in the map database. This includes new mapping, new radiometric age determinations, and appropriate research literature.

For ARDF, we work with contractors and cooperators to update or create records tracking site-based industry exploration in Alaska. Additionally, we work to enhance the design of the database to facilitate use.

Introduction

The databases: The Alaska geologic map database, published in 2015 as SIM-3340 (<https://pubs.er.usgs.gov/publication/sim3340>); intended for release of a version 2 in calendar year 2019.

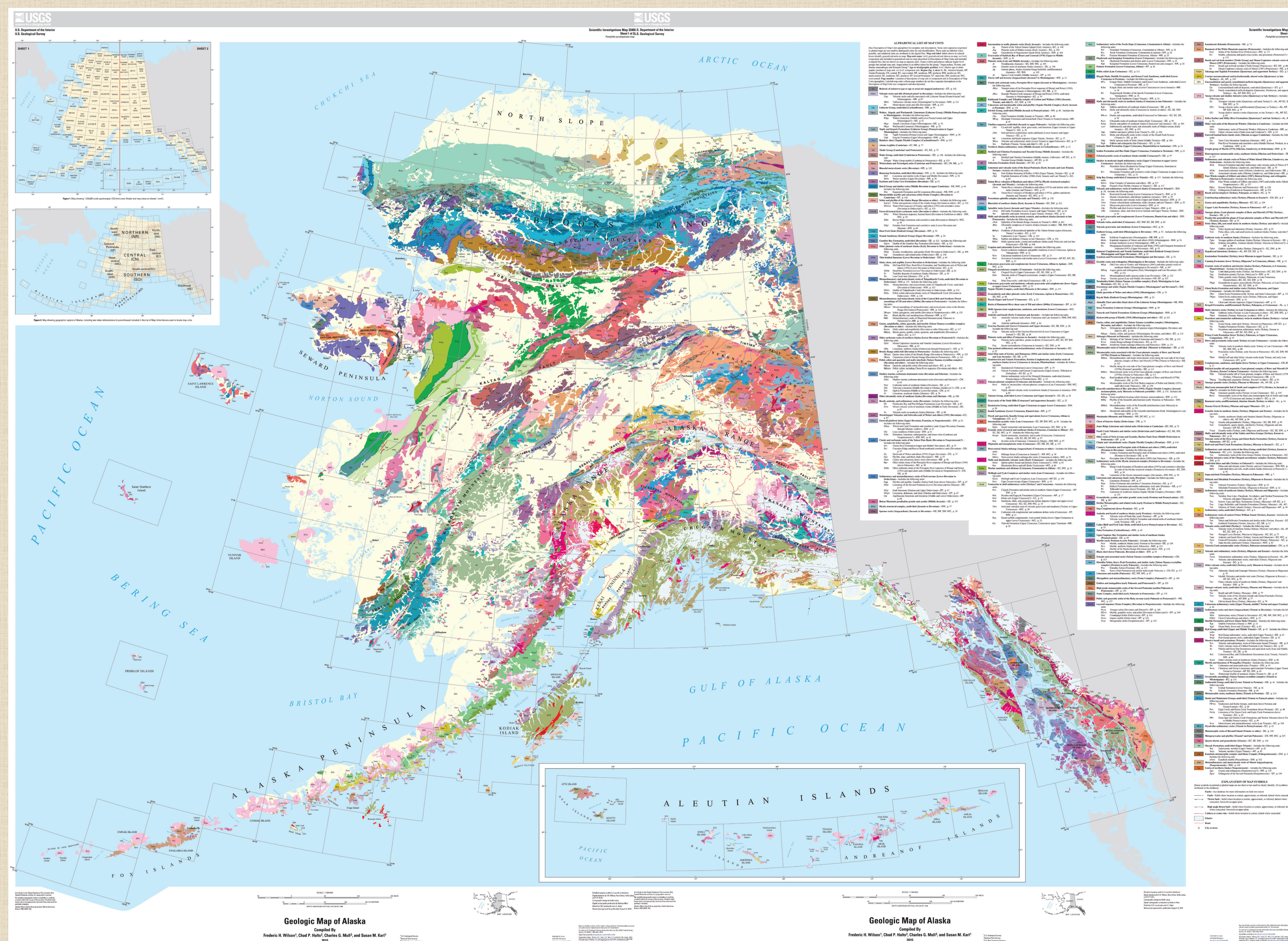
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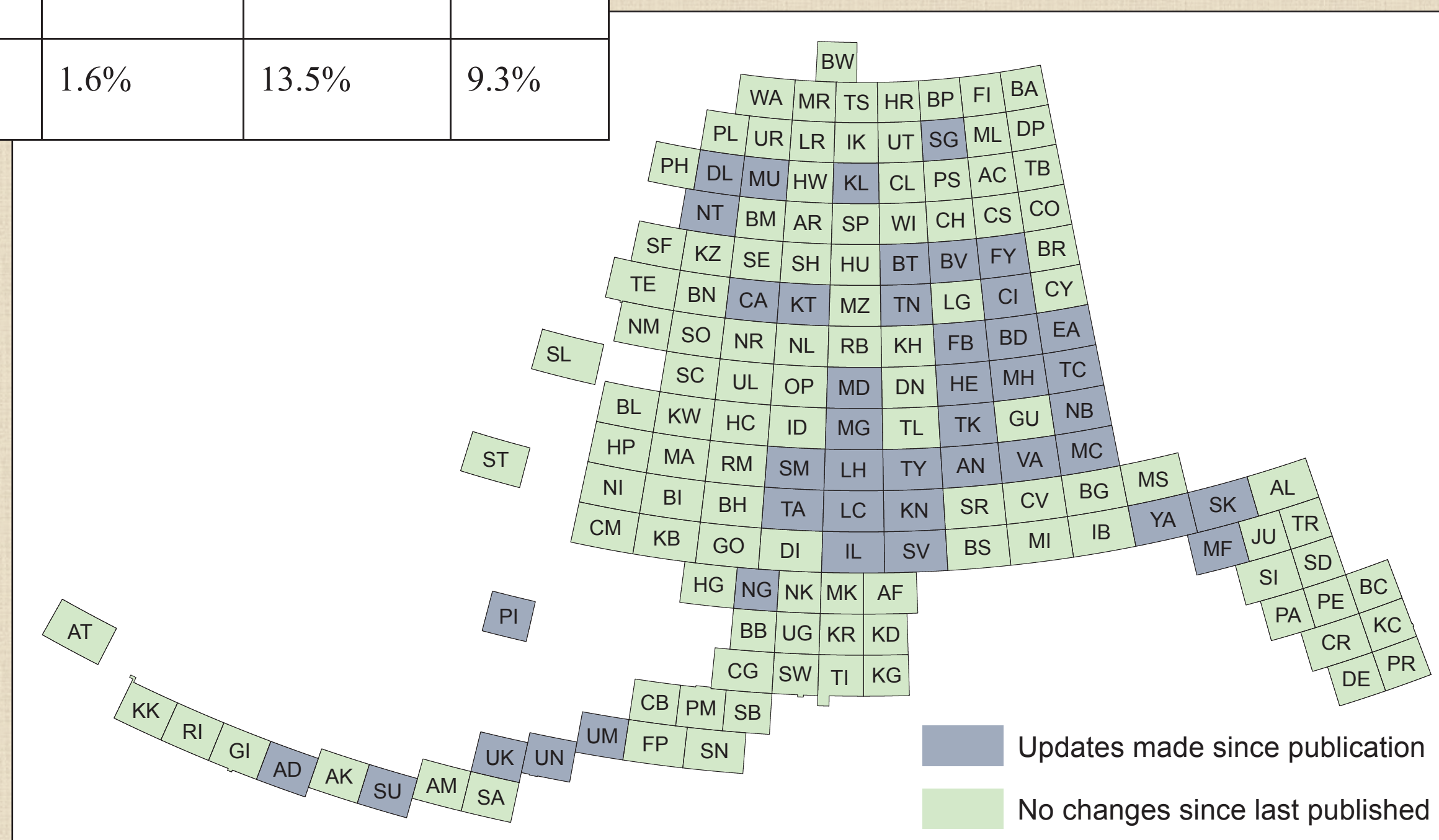
Geologic Map of Alaska



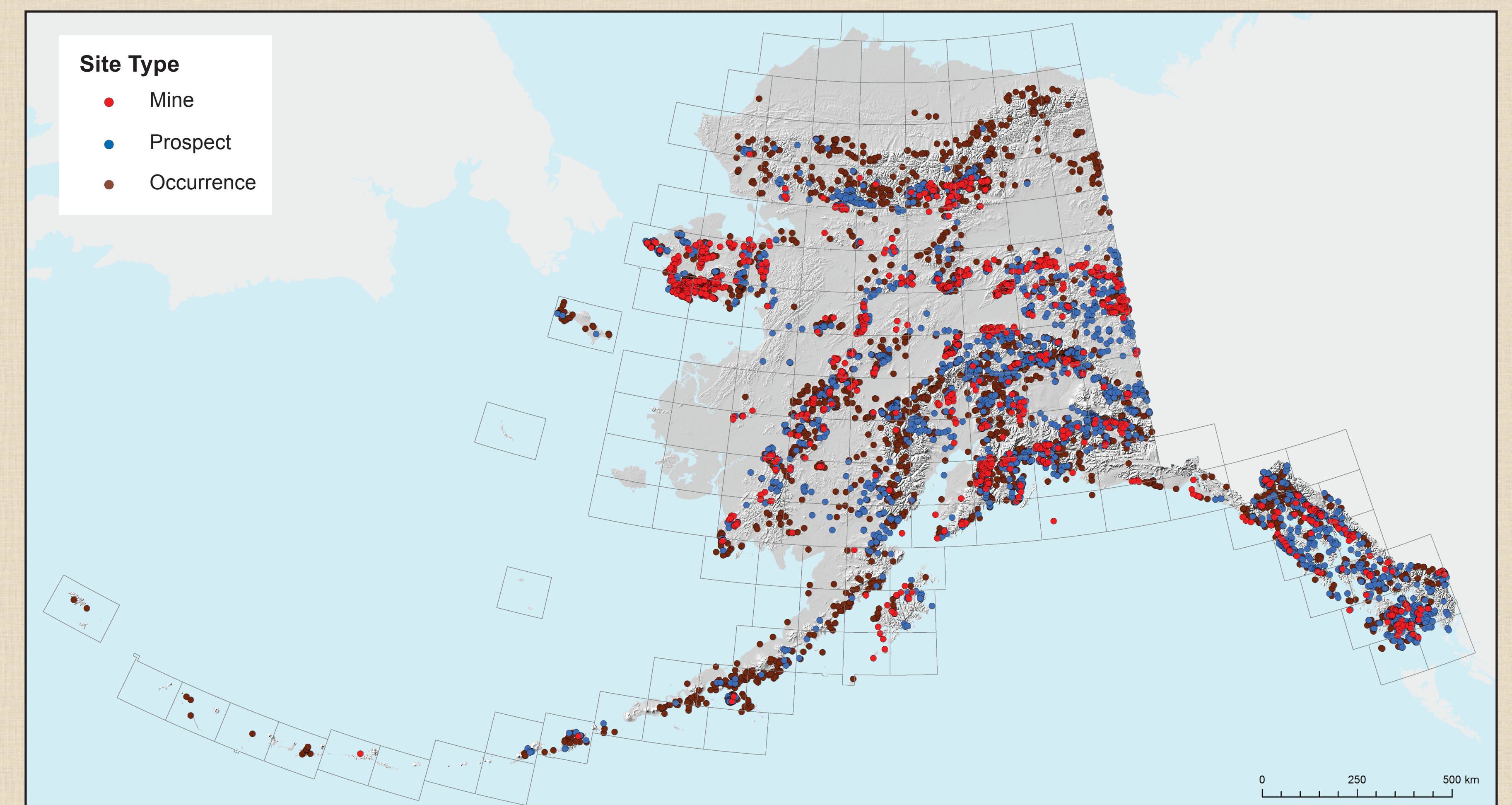
Mapping Status

Alaska Geologic Map	General references	Map sources	Unit descriptions	Defined units	Radiometric ages (other than U/Pb)	U/Pb ages
Published map (2015)	4,199	1,182	18,911	1,356	5,847	1,252
Updates (May 2019)	4,504	1,298	21,105	1,378	6,635	1,368
Percent change	7.3%	9.8%	11.6%	1.6%	13.5%	9.3%

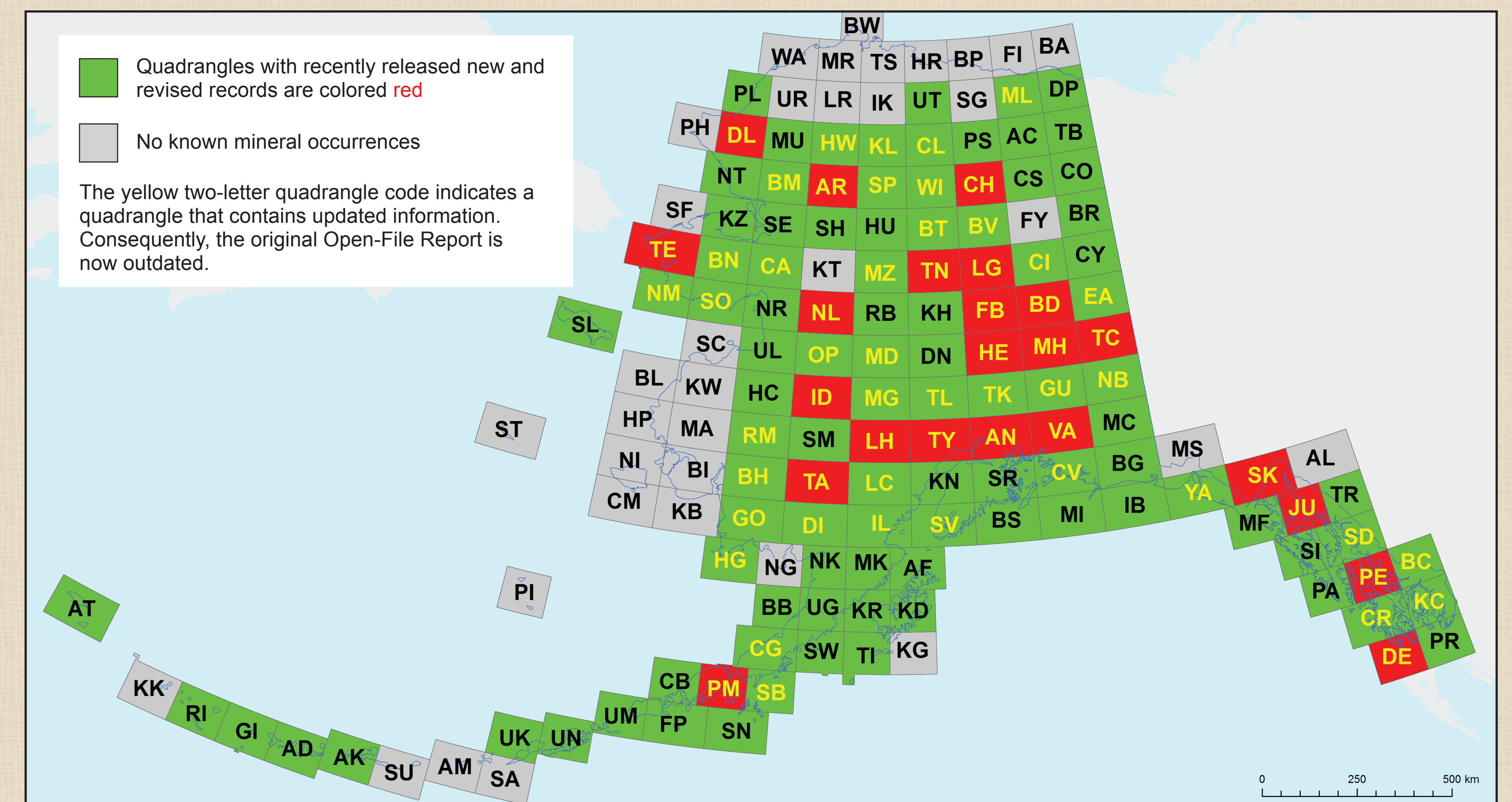
- In the future, Earth-MRI efforts will potentially provide new geologic mapping to be incorporated into the dataset.



Alaska Resource Data File (ARDF)



ARDF Status



- Presently searching for new contractors to provide update based on industry activity. In the process of hiring a staffer to assist with data revision, checking locations and converting coordinates to NAD'83 from NAD'27.
- Developing protocols to add new data fields to include geo-environmental models and contaminants of concern for sites that have well-defined descriptions.
- Basic ARDF statistics:
7719 records, total
1651 mine sites
3161 prospect sites
1053 sites had data allowing use of the Fennoscandian Ore-Deposit Database (FODD) criteria to set value and size. Of these sites, based on copper-equivalent value, 7 were considered Very Large (CU-EQ > 2,000,000 tonnes), 9 considered Large (CU_EQ up to 2,000,000 tonnes), and 34 considered Medium (CU_EQ as much 600,000 tonnes).